Hyperscale SIG update
Agenda

- SIG recap
- Deliverables and recent work
- Demo
- Coming up
Hyperscale SIG

- CentOS Stream focus
- Large-scale infrastructure
- Foster cross-company collaboration on packages and tooling
- Bring in-house development out in the open
- Open to anybody interested in working in this space
Documentation

- Charter: [https://wiki.centos.org/SpecialInterestGroup/Hyperscale](https://wiki.centos.org/SpecialInterestGroup/Hyperscale)
- Activity reports:
  - 2021Q2: [https://blog.centos.org/2021/06/centos-hyperscale-sig-quarterly-report-for-2021q2/](https://blog.centos.org/2021/06/centos-hyperscale-sig-quarterly-report-for-2021q2/)
- User documentation: [https://sigs.centos.org/hyperscale](https://sigs.centos.org/hyperscale)
SIG health

- Established in Jan 2021 with 6 founding members
- +8 members since then
- #centos-hyperscale on Libera.Chat
- Bi-weekly IRC meetings
- Monthly hackathons / hangouts
- Issue tracker: [https://pagure.io/centos-sig-hyperscale/sig](https://pagure.io/centos-sig-hyperscale/sig)
- Conference talks
  - CentOS Dojo FOSDEM 2021: [https://www.youtube.com/watch?v=Kg7FqVGaZxs](https://www.youtube.com/watch?v=Kg7FqVGaZxs)
  - DevConf.cz 2021: [https://www.youtube.com/watch?v=K8x4CletnCc](https://www.youtube.com/watch?v=K8x4CletnCc)
  - FOSDEM 2021: [https://fosdem.org/2021/schedule/event/desktoplinuxmgmtatfacebook/](https://fosdem.org/2021/schedule/event/desktoplinuxmgmtatfacebook/)
  - LISA21: [https://www.usenix.org/conference/lisa21/presentation/cavalca](https://www.usenix.org/conference/lisa21/presentation/cavalca)
  - CentOS Dojo May 2021: [https://www.youtube.com/watch?v=Ehsvz7-IDuA](https://www.youtube.com/watch?v=Ehsvz7-IDuA)
Hyperscale SIG scope

- Faster moving package backports
- Policy and configuration alternatives
- Large-scale testing enablement
- Kernel
- Live DVD ISOs
Package backports

- Delivered to the Hyperscale main repository
  - dnf install centos-release-hyperscale
- Drop in replacements for stock CentOS packages
- File bugs on https://pagure.io/centos-sig-hyperscale/package-bugs
- Now built against (and requiring) EPEL
Architecture support

- Hyperscale initially only targeted x86_64
- Now building packages for aarch64 too!
- Existing packages are still being rebuilt
systemd

- SIG branch tracking the latest upstream (currently 249)
- Defaults to unified hierarchy (cgroup2)
- systemd-oomd (needs PSI)
- systemd-networkd, systemd-resolved
- Experimental SELinux enablement
systemd

- Public repo to track development and stage patches
  - [https://pagure.io/centos-sig-hyperscale/systemd](https://pagure.io/centos-sig-hyperscale/systemd)
- Public repo for releng tools and scripts
  - [https://pagure.io/centos-sig-hyperscale/systemd-releng](https://pagure.io/centos-sig-hyperscale/systemd-releng)
- Contbuild on CentOS CI
  - Based on the current Hyperscale packaging
  - Daily rebuilds of the upstream git master
  - VM testing: [https://pagure.io/centos-infra/issue/308](https://pagure.io/centos-infra/issue/308)
Information for user hyperscalebot

<table>
<thead>
<tr>
<th>Name</th>
<th>hyperscalebot</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>255</td>
</tr>
<tr>
<td>Tasks</td>
<td>650</td>
</tr>
<tr>
<td>Packages</td>
<td>No packages</td>
</tr>
</tbody>
</table>

1 through 10 of 333

<table>
<thead>
<tr>
<th>NVR</th>
<th>Finished</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>systemd-249-1.20211005.e66ee1d.hs+fb.e8</td>
<td>2021-10-05 17:34:29</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211005.e66ee1d.hs.e8</td>
<td>2021-10-05 17:15:56</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211004.e82dc15.hs+fb.e8</td>
<td>2021-10-04 17:37:37</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211004.e82dc15.hs.e8</td>
<td>2021-10-04 17:19:08</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211003.e40671b.hs+fb.e8</td>
<td>2021-10-03 17:37:05</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211003.e40671b.hs.e8</td>
<td>2021-10-03 17:18:37</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211002.e40671b.hs+fb.e8</td>
<td>2021-10-02 17:37:06</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211002.e40671b.hs.e8</td>
<td>2021-10-02 17:18:55</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211001.e64ccab.hs+fb.e8</td>
<td>2021-10-01 17:31:14</td>
<td>✔</td>
</tr>
<tr>
<td>systemd-249-1.20211001.e64ccab.hs.e8</td>
<td>2021-10-01 17:16:06</td>
<td>✔</td>
</tr>
</tbody>
</table>
LLVM 12

- Used to ship a non-modular LLVM 12 build
- Now retired in favor of the upstream one
- [https://bugzilla.redhat.com/show_bug.cgi?id=1952248](https://bugzilla.redhat.com/show_bug.cgi?id=1952248)
Large-scale testing

- Provide a way to test distro-wide changes in production settings
- DNF/RPM Copy-on-Write
  - [https://fedoraproject.org/wiki/Changes/RPMCoW](https://fedoraproject.org/wiki/Changes/RPMCoW)
  - Requires patched packaging stack
  - Currently deployed in production at FB
- Released to a dedicated “experimental” repo
  - dnf install centos-release-hyperscale-experimental
Kernel

- Test 5.12 kernel based on kernel-ark
- Development tree: [https://pagure.io/centos-sig-hyperscale/linux](https://pagure.io/centos-sig-hyperscale/linux)
- Planning to rebase onto 5.14 and track CentOS Stream 9 going forward
- Btrfs support
- Outstanding issues
  - Secure boot: [https://pagure.io/centos-infra/issue/307](https://pagure.io/centos-infra/issue/307)
  - [https://pagure.io/centos-sig-hyperscale/sig/issue/7](https://pagure.io/centos-sig-hyperscale/sig/issue/7)
Kernel userspace

- **Btrfs**
  - btrfs-progs backported from Fedora, currently at 5.13.1
  - Restored btrfs support in the storage stack and installer
    - Anaconda installer development tree: [https://pagure.io/centos-sig-hyperscale/anaconda](https://pagure.io/centos-sig-hyperscale/anaconda)
    - Released to dedicated “spin” repo for media
    - Used for Hyperscale spin media

- **kpatch**
  - Updated to 0.9.4
  - Includes **kpatch-build**
  - **CONFIG_PRINTK_INDEX support**
Container image

- Minimal container image based on Hyperscale repos and packages
- Build from scratch: [https://pagure.io/centos-sig-hyperscale/containers-releng](https://pagure.io/centos-sig-hyperscale/containers-releng)
- [https://quay.io/centoshyperscale/centos](https://quay.io/centoshyperscale/centos)
- `podman run -a stdin,stdout,stderr -t quay.io/centoshyperscale/centos:stream8`
Live media spin

- Two CentOS Stream 8 spins: GNOME and KDE Plasma
- Live DVD ISO images with Hyperscale repos and packages
- Leveraging our kernel with btrfs support out of the box
- Download: https://sigs.centos.org/hyperscale/spins/workstation/
Demo
Coming up

- Btrfs transactional updates
  - [https://pagure.io/centos-sig-hyperscale/sig/issue/37](https://pagure.io/centos-sig-hyperscale/sig/issue/37)
- Updated kernel package based on CentOS Stream 9
- CBS-based live media image builds
- Updated QEMU package in EPEL
- Continuous-build pipeline for the container image
- Hyperscale-enabled cloud images
CentOS Stream 9

● It’s here!
  ○ Sources: https://gitlab.com/redhat/centos-stream/rpms
  ○ Koji: https://kojihub.stream.centos.org
  ○ Composes: https://composes.stream.centos.org/production/
  ○ Mirror: http://mirror.stream.centos.org

● Already started some builds in CBS, waiting for release tags

● systemd daily builds coming up too
  ○ Currently blocked on libiptc
  ○ https://pagure.io/centos-sig-hyperscale/package-bugs/issue/9
Resources

- [https://wiki.centos.org/SpecialInterestGroup/Hyperscale](https://wiki.centos.org/SpecialInterestGroup/Hyperscale)
- [https://sigs.centos.org/hyperscale](https://sigs.centos.org/hyperscale)
- Bi-weekly meetings and monthly VC hangout
  - [https://www.centos.org/community/calendar](https://www.centos.org/community/calendar)
- [https://pagure.io/centos-sig-hyperscale/sig](https://pagure.io/centos-sig-hyperscale/sig) issue tracker
- centos-devel mailing list
Questions?